

Executive Summary

The Utah Department of Transportation (UDOT) has completed a statewide review of managed lanes strategies and how they may apply to Utah's transportation system.

As travel on Utah's highways continues to grow almost twice as fast as population, UDOT is exploring managed lanes as one tool to address the current and future travel demand by cost-effectively maximizing transportation capacity. Facing a \$16.5 billion deficit in roadway funding through the year 2030, innovative methods that relieve congestion and help move people and not just cars must be examined.

This study addresses the many issues associated with managed lanes concepts, both technically and from an institutional perspective as they relate to Utah.

Utah Trends 1990-2000 Statewide 60% 54% 50% 40% 30% 30% 20% 10% 5% Vehicle Population State Highway

The amount of travel that occurs continues to increase at a rate faster than the rate of population growth

Study Goals & Objectives

The goal of this study was to provide relevant information about managed lanes and their potential in Utah. The study's objectives were to explore the role of managed lanes as a solution to statewide congestion problems and to identify where proposed strategies are likely to work in terms of overall corridor performance costs and benefits.

This study supports UDOT's four strategic goals, which are:

- 1. Take care of what we have
- 2. Make it work better
- 3. Improve safety
- **Increase capacity**

What are Managed Lanes?

Managed lanes are transportation strategies that can reduce congestion on the existing system and/or generate revenue to add capacity to the system. These strategies include:



High Occupancy Vehicle (HOV) Lanes

HOV or carpool lanes are reserved for vehicles with a minimum of two passengers. This managed lanes strategy is currently used on I-15 in Utah.



High Occupancy Toll (HOT) Lanes

HOT lanes may be used by enter a limited-access HOVs for free, but vehicles with only one passenger must pay a toll to use the lane.



Toll Roads

Users must pay a toll to facility, usually a freeway or a bridge.



Reversible Lanes

Lanes where the direction of travel is reversed to provide more capacity during peak travel periods. Managed lanes can be used as congestion management strategies, financial management tools, or both. Managed lanes will give Utah more flexibility in balancing fiscal and functional needs. The study indicates that HOT lanes, HOV lanes, and reversible lanes could be used as congestion management tools and that toll roads could be a combination of both financial and congestion management tools.

Project Team

A small study team consisting of high-level UDOT staff oversaw the project. The project team's responsibilities included assisting the study by attending progress meetings and providing direct feedback to the results and recommendations presented at each meeting. The team members took the information from the study back to their respective "constituents" and in turn provided guidance to the direction of the study.

Roles of team members were as follows:

- **Region Director** discussed the study with other region directors
- Director of Community Affairs discussed the study with department leadership
- Director of Legislative Affairs discussed with legal counsel and legislative representatives
- Project Development representative shared information with key project development leadership

Literature Review and Case Studies

A literature review of relevant research on the topic of managed lanes was conducted to determine the state of the practice for managed lanes facilities and to document what works well and under what conditions.

In addition to reviewing relevant research, nineteen managed lanes case studies were selected as a part of a national program review, managed lanes agencies were contacted, and facility tours were conducted in Denver, Houston, and San Diego. The information collected served as the foundation for the three-phased corridor screening process used to evaluate candidate corridors throughout the state.

Study Methodology

A sketch planning methodology guided the process of identifying the corridors available for managed lanes strategies. The three-phased screening methodology narrowed the potential corridors from the entire Utah state highway system down to 14 candidate corridors by degree of managed lanes potential. The map on page 4 depicts these corridors by managed lanes strategy and potential.

Phase I screening included all highways within the state highway system. Broad criteria were applied to each state highway facility resulting in approximately 50 potential candidate corridors. Phase II screening included a more data intensive process that evaluated each corridor against fundamental managed lanes criteria and resulted in the 14 candidate corridors. Phase III screening included a more detailed analysis, including estimation of capitol costs, operating costs, maintenance costs, and revenue.

The following figure shows where the Managed Lanes Study fits within UDOT's overall decision-making process. As shown, there is a large role for UDOT project development support on managed lanes. This study, by design, only took the first step.



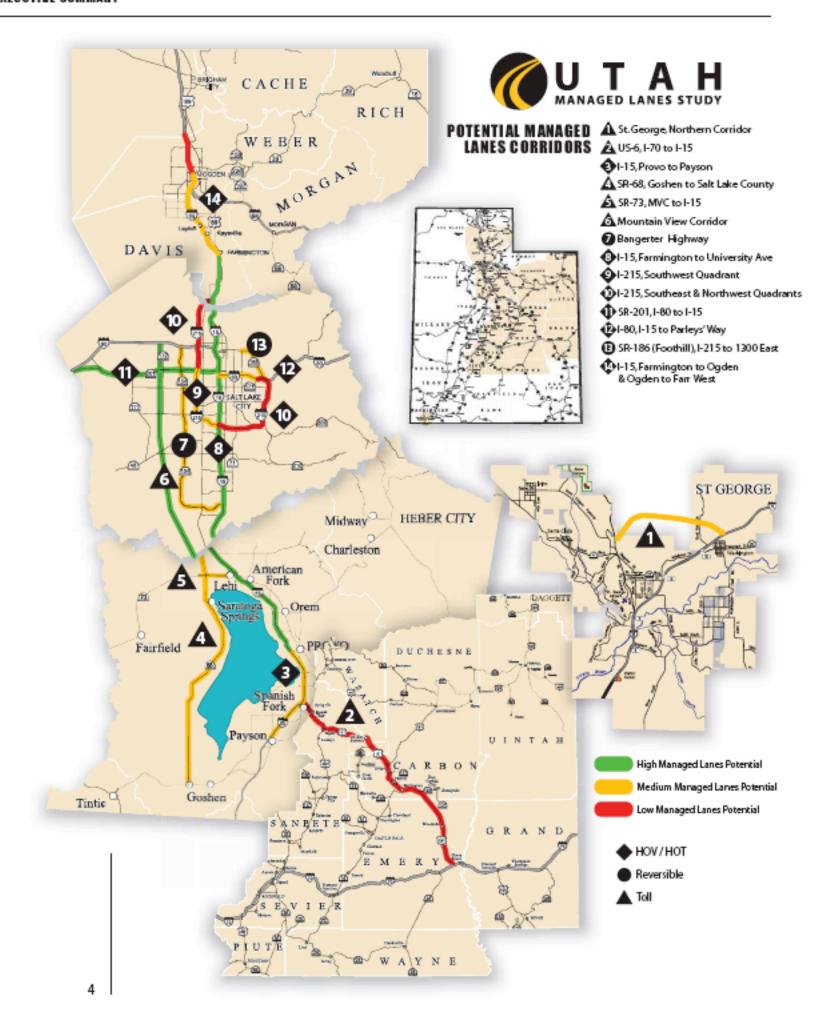
-Congestion - Maior Link Long Range Plans - Safety **Jtah State Trans**portation System Yes **SCREENING PROCESS** REVERSIBLE HOV нот TOLL Congestion? Unbalanced flow? Congestion? Congestion? Congestion or parallel Regional HOV Underutilized HOV facility congestion? Excess capacity in non-peak direction? and/or unfunded Freeway or higher? Cost benefit potential? capacity improvement Freeway or higher? Decision Decision Decision Decision Yes Yes RECOMMENDED CANDIDATE CORRIDORS **END OF MANAGED LANES STUDY** Statewide Transportation Improvement Program (STIP) Statewide Transportation Improvement Program (STIP) Transportation Commission funds Environmental Impact Statement (EIS)* Transportation Commission funds feasibility study* **DECISION-MAKING PROCESS** National Environmental Policy Act (NEPA) Process Feasibility Study Yes Yes No Transportation Commission approves managed lanes concept* DESIGN, CONSTRUCT, OPERATE MANAGED LANES

Managed Lanes Study Methodology

*Indicates decision-making point and public input.

Opportunities and Constraints

Managed Lanes as a concept is still new in Utah and it is important to identify those issues that are critical to the implementation of the recommended corridors. The range of issues includes statutory and other institutional concerns, as well as financial and public issues. These issues were addressed through a series of "frequently asked questions", or FAQs designed to answer questions a policy-maker might have about managed lanes and how they could function in Utah.





Next Steps

With proper planning and implementation, the first managed lanes project in Utah is likely to be a tremendous success. However, the success of any managed lanes project will depend on the guarantee of safety, the degree of public acceptance, the ability of the project to meet its publicly stated objectives, and the ultimate efficiency of traffic operations. These issues must be thoroughly analyzed with a high level of confidence at the corridor level prior to implementation.

Key "next steps" include:

- Clearing existing institutional hurdles legislation, public acceptance, and organizational structure
- Incorporating managed lanes corridors into the short- and long-range planning processes
- Incorporating managed lanes into the UDOT project development process

Recent legislative discussion and subsequent bill allowing HOT lanes has been positive and progressive and UDOT should continue to work with elected officials to ensure that the key managed lanes legislative measures receive attention in the coming years.

The experience of other states shows that public outreach and education activities will peak during the project implementation phase. UDOT's recent involvement with HOV promotion is one example of a high visibility managed lanes public outreach process. Similar campaigns with reversible lanes, HOT lanes, and toll roads will be beneficial.

The last major institutional hurdle for successful managed lanes projects is the development and implementation of an effective organizational structure within UDOT that includes a clearly defined project purpose and a high degree of interagency coordination

This study has provided a primer of the state of the practice of managed lanes in the U.S. It has also identified, through a sketch planning process, the type and locations where managed lanes may be appropriate for implementation on the state system. The next steps, should UDOT decide to go further, will be key to the whole notion of managed lanes because these projects will be new concepts to the traveling public, meaning their success or shortcomings will be under a high level of public and political scrutiny.